

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

## (i) APPLICANT:

(A) NAME: Akzo Nobel N.V.  
 (B) STREET: Velperweg 76  
 (C) CITY: Arnhem  
 (E) COUNTRY: The Netherlands  
 (F) POSTAL CODE (ZIP): 6824 BM  
 (G) TELEPHONE: 0412 666379  
 (H) TELEFAX: 0412 650592

(ii) TITLE OF INVENTION: Coccidiosis vaccines

(iii) NUMBER OF SEQUENCES: 41

## (iv) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
 (B) COMPUTER: IBM PC compatible  
 (C) OPERATING SYSTEM: PC-DOS/MS-DOS  
 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

## (2) INFORMATION FOR SEQ ID NO: 1:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 214 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

Met Pro Phe Glu Leu Pro Pro Leu Pro Tyr Pro Met Asp Ala Leu Glu  
 1 5 10 15  
 Pro Tyr Ile Ser Lys Glu Thr Leu Glu Tyr His Tyr Gly Lys His His  
 20 25 30  
 Ala Ala Tyr Val Asn Asn Leu Asn Arg Leu Val Glu Gly Lys Pro Glu  
 35 40 45  
 Ala Ser Lys Ser Leu Glu Glu Ile Ile Lys Thr Ser Ser Gly Ser Val  
 50 55 60  
 Leu Asn Asn Ala Gly Gln Ala Trp Asn His Thr Phe Tyr Trp Lys Ser  
 65 70 75 80  
 Met Arg Pro Ala Ser Ala Gly Gly Pro Pro Gly Ala Pro Gly Gly Gly

85

90

95

5 Pro Pro Gly Ala Pro Gly Ala Pro Leu Arg Glu Glu Leu Glu Ser Ala  
                   100                  105                  110  
 Phe Gly Gly Val Glu Lys Phe Arg Glu Ala Phe Ala Ala Ala Ala Ala  
                   115                  120                  125  
 10 Ala His Phe Gly Ser Gly Trp Ala Trp Leu Cys Phe Cys Lys Lys Ser  
                   130                  135                  140  
 Arg Ser Leu Phe Leu Leu Gln Thr His Asp Gly Ala Thr Pro Phe Arg  
                   145                  150                  155                  160  
 15 Asp Asn Pro Asn Cys Ala Pro Leu Leu Thr Cys Asp Leu Trp Glu His  
                   165                  170                  175  
 Ala Tyr Tyr Ile Asp Arg Arg Asn Asp Arg Lys Ser Tyr Leu Asp Ala  
                   180                  185                  190  
 20 Trp Trp Ser Val Val Asn Trp Asp Phe Ala Asn Glu Asn Leu Lys Lys  
                   195                  200                  205  
 25 Ala Met Gln Gly Ser Asp  
                   210

## (2) INFORMATION FOR SEQ ID NO: 2:

30 (i) SEQUENCE CHARACTERISTICS:  
       (A) LENGTH: 13 amino acids  
       (B) TYPE: amino acid  
       (C) STRANDEDNESS: single  
       (D) TOPOLOGY: linear

35 (ii) MOLECULE TYPE: protein  
       (v) FRAGMENT TYPE: internal

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## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

45 Leu Gly Pro Leu Ala Leu Pro Leu Leu Ala Asp Val Arg  
           1                  5                  10

## (2) INFORMATION FOR SEQ ID NO: 3:

50 (i) SEQUENCE CHARACTERISTICS:  
       (A) LENGTH: 223 amino acids  
       (B) TYPE: amino acid  
       (C) STRANDEDNESS: single  
 55 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

Met Pro Leu Asn Leu Gly Asp Ser Phe Pro Asp Phe Gln Ala Glu Ala  
 1 5 10 15  
 10 Leu Gly Ala Glu His Phe Arg Leu His Glu Tyr Leu Gly Asp Ser Trp  
 20 25 30  
 15 Gly Val Met Phe Ser His Pro Asn Asp Phe Thr Pro Val Cys Thr Thr  
 35 40 45  
 Glu Leu Ala Glu Ala Val Lys Leu Gln Asp Ser Phe Thr Lys Lys Asn  
 50 55 60  
 20 Cys Lys Leu Val Gly Phe Ser Cys Asn Asp Leu Gln Ser His Arg Glu  
 65 70 75 80  
 Trp Ala Lys Asp Ile Met Ala Tyr Ala Gly Arg Ser Gly Asn Leu Pro  
 85 90 95  
 25 Phe Pro Leu Val Cys Asp Pro Asn Arg Glu Leu Ala Ala Ser Leu Gly  
 100 105 110  
 30 Ile Met Asp Pro Ala Glu Lys Asp Lys Lys Gly Leu Pro Leu Thr Cys  
 115 120 125  
 Arg Cys Val Phe Phe Ile Ser Pro Glu Lys Lys Leu Ala Ala Ser Ile  
 130 135 140  
 35 Leu Tyr Pro Ala Thr Thr Gly Arg Asn Phe Ala Glu Ile Leu Arg Val  
 145 150 155 160  
 Leu Asp Ser Leu Gln Leu Thr Ala Lys Phe Pro Val Ala Thr Pro Val  
 165 170 175  
 40 Asp Trp Thr Ala Gly Ala Lys Cys Cys Val Val Pro Asn Leu Ala Ala  
 180 185 190  
 45 Glu Glu Ala Gln Arg Leu Leu Pro Lys Gly His Glu Ala Leu Gln Leu  
 195 200 205  
 Pro Ser Gly Lys Pro Tyr Leu Arg Leu Thr Pro Asp Pro Arg Gly  
 210 215 220

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(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- 55 (A) LENGTH: 15 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

10 Met Ser Pro Ser Pro Ala Gly Val Ala Glu Tyr Leu Ala Ser Leu  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO: 5:

15 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

30 Asn His Ala Glu Phe Asp Pro Ser Gln Thr Glu Val Val Val Phe Pro  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO: 6:

35

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

50

Val Asp Ser Phe Thr Pro Ser Val Gly Cys Val Phe Ala Gly Met Pro  
1 5 10 15

Ala Asp Phe Arg  
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(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: double  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

GTAAATTGGG ACTTCGC

17

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: double  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

GTAAACTGGG ACTTCGC

17

(2) INFORMATION FOR SEQ ID NO: 9:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: double  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

GTAAATTGGG ACTTCGC

17

(2) INFORMATION FOR SEQ ID NO: 10:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: double  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

5       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:  
GTAAACTGGG ACTTCGC 17

10       (2) INFORMATION FOR SEQ ID NO: 11:  
      (i) SEQUENCE CHARACTERISTICS:  
          (A) LENGTH: 17 base pairs  
          (B) TYPE: nucleic acid  
          (C) STRANDEDNESS: double  
15           (D) TOPOLOGY: linear  
      (ii) MOLECULE TYPE: DNA (genomic)

20       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:  
GTTAATTGGG ACTTCGC 17

25       (2) INFORMATION FOR SEQ ID NO: 12:  
      (i) SEQUENCE CHARACTERISTICS:  
          (A) LENGTH: 17 base pairs  
30           (B) TYPE: nucleic acid  
          (C) STRANDEDNESS: double  
          (D) TOPOLOGY: linear  
      (ii) MOLECULE TYPE: DNA (genomic)

35       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:  
GTTAACTGGG ACTTCGC 17

40       (2) INFORMATION FOR SEQ ID NO: 13:  
      (i) SEQUENCE CHARACTERISTICS:  
          (A) LENGTH: 17 base pairs  
          (B) TYPE: nucleic acid  
          (C) STRANDEDNESS: double  
45           (D) TOPOLOGY: linear  
      (ii) MOLECULE TYPE: DNA (genomic)

50       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:  
GTTAATTGGG ACTTCGC 17

55       (2) INFORMATION FOR SEQ ID NO: 14:  
      (i) SEQUENCE CHARACTERISTICS:  
          (A) LENGTH: 17 base pairs  
          (B) TYPE: nucleic acid  
          (C) STRANDEDNESS: double  
50           (D) TOPOLOGY: linear  
      (ii) MOLECULE TYPE: DNA (genomic)

55       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:  
GTTAATTGGG ACTTCGC 17

## (2) INFORMATION FOR SEQ ID NO: 14:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

GTAACTGGG ACTTCGC

17

## (2) INFORMATION FOR SEQ ID NO: 15:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

GTGAATTGGG ACTTTGC

17

## (2) INFORMATION FOR SEQ ID NO: 16:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GTGAAGTGGG ACTTTGC

17

## (2) INFORMATION FOR SEQ ID NO: 17:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

10 GTGAATTGGG ACTTTGC

17

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

15 (A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

20 (ii) MOLECULE TYPE: DNA (genomic)

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

GTGAAGTGGG ACTTTGC

17

(2) INFORMATION FOR SEQ ID NO: 19:

30

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
35 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

GTCAATTGGG ACTTTGC

17

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(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs  
50 (B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

17

GTCAACTGGG ACTTTGC

5 (2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

17

20 GTCAATTGGG ACTTTGC

(2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

17

GTCAACTGGG ACTTTGC

(2) INFORMATION FOR SEQ ID NO: 23:

40

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

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GTAAATTGGG ATTTCGC

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(2) INFORMATION FOR SEQ ID NO: 24:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

GTAAACTGGG ATTTCGC

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15 (2) INFORMATION FOR SEQ ID NO: 25:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

30 GTAAATTGGG ATTTCGC

17

(2) INFORMATION FOR SEQ ID NO: 26:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear

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40 (ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GTAAACTGGG ATTTCGC

17

(2) INFORMATION FOR SEQ ID NO: 27:

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- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

5 GTTAATTGGG ATTTCGC 17

(2) INFORMATION FOR SEQ ID NO: 28:

10 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: DNA (genomic)

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

GTTAAGTGGG ATTTCGC 17

25 (2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
30 (C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

40 GTTAATTGGG ATTTCGC 17

(2) INFORMATION FOR SEQ ID NO: 30:

45 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

50 (ii) MOLECULE TYPE: DNA (genomic)

55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

GTTAAGTGGG ATTTCGC 17

(2) INFORMATION FOR SEQ ID NO: 31:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

GTGAATTGGG ATTTTGC

(2) INFORMATION FOR SEQ ID NO: 32:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

GTGAACTGGG ATTTTGC

(2) INFORMATION FOR SEQ ID NO: 33:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

GTGAATTGGG ATTTTGC

(2) INFORMATION FOR SEQ ID NO: 34:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

GTGAACTGGG ATTTTGC

17

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(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

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- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

25

GTCAATTGGG ATTTTGC

17

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

30

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

GTCAACTGGG ATTTTGC

17

(2) INFORMATION FOR SEQ ID NO: 37:

(i) SEQUENCE CHARACTERISTICS:

50

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

17

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(B) TYPE: nucleic acid

(D) TOPOLOGY: linear

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GTCAACTGGG. ATTTTGC

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(B) TYPE: nucleic acid

(D) TOPOLOGY: linear

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atg ccg ttc gaa ctc ccc ccg ctg ccg tac ccc atg gac gcc ctc gag 48  
Met Pro Phe Glu Leu Pro Pro Leu Pro Tyr Pro Met Asp Ala Leu Glu  
1 5 10 15

ccg tac atc agc aaa gag act ctc gag tac cac tat ggg aag cac cac 96  
Pro Tyr Ile Ser Lys Glu Thr Leu Glu Tyr His Tyr Gly Lys His His  
20 25 30

gcg gct tac gtg aac aac ttg aac aga ctc gtc gag ggg aag ccg gag 144  
Ala Ala Tyr Val Asn Asn Leu Asn Arg Leu Val Glu Gly Lys Pro Glu  
35 40 45

gct tcc aag agc ctg gag gaa ata ata aag acc tcc tcg ggg tcg gtg 192  
Ala Ser Lys Ser Leu Glu Glu Ile Ile Lys Thr Ser Ser Gly Ser Val  
50 55 60

ctg aac aac gcg ggc cag gcg tgg aac cac acg ttc tac tgg aag tcg 240  
Leu Asn Asn Ala Gly Gln Ala Trp Asn His Thr Phe Tyr Trp Lys Ser  
65 70 75 80

atg cgg ccg gcc tcg gcg ggg ggc ccc ccg ggg gcc ccc ggc ggg ggc 288  
Met Arg Pro Ala Ser Ala Gly Gly Pro Pro Gly Ala Pro Gly Gly Gly  
85 90 95

[illegible]

(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 265 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

TTCCCGGATT	TTCAGGCGGA	GGCGCTGGGC	GCCGAGCACT	TCCGCTTGCA	CGAGTACTTG	60
GGGGACAGCT	GGGGAGTGAT	G TTCAGGTAA	GATTGGCGTA	AAAAAGCCCC	ATTTAATCGC	120
ATTTTTTAATT	CTGTAGACTC	TGTGTCGACT	GCTGAGCACG	AGGGGGGGGC	CTGCTGCACG	180
GGAGAGCCTT	GTCTCGCGCT	CAACTCTGGG	TTTCTGGCGT	TGCTTG CAGC	CACCCGAACG	240

	ctg gac tct ctg cag ctc act gcc aag ttt cca gtg gcc act cca gtg	528
	Leu Asp Ser Leu Gln Leu Thr Ala Lys Phe Pro Val Ala Thr Pro Val	
	165 170 175	
5		
	gac tgg acc gct ggg gcc aaa tgc tgc gta gtg ccg aac ttg gca gca	576
	Asp Trp Thr Ala Gly Ala Lys Cys Cys Val Val Pro Asn Leu Ala Ala	
	180 185 190	
10		
	gaa gag gcc caa agg ctt ttg ccc aaa ggc cac gag gcg ctg cag ctg	624
	Glu Glu Ala Gln Arg Leu Leu Pro Lys Gly His Glu Ala Leu Gln Leu	
	195 200 205	
15		
	cct tcg ggg aag cct tac ctg cgg ctc acc cca gac ccc agg ggc tga	672
	Pro Ser Gly Lys Pro Tyr Leu Arg Leu Thr Pro Asp Pro Arg Gly	
	210 215 220	